

CLAIMS

1. A method of planning a Network which is capable of passing packet based data therethrough, the method of planning comprising: determining a plurality of requirements for the network; determining factors which effect the passage of said packet based data through the network; modelling the performance of the network based on said requirements and said factors; comparing the performance with an objective comparison model; iteratively adjusting said factors to improve the performance and maintain the network requirements; and outputting a plan of the network.
2. A method as claimed in claim 1, wherein said network requirements are selected from the group comprising quality, incentive, cut-price and combinations thereof.
3. A method as claimed in claim 2, wherein said voice quality benchmarks comprise clarity, incentive and cut-price.
4. A method as claimed in claim 3, wherein said clarity benchmark is determined as voice quality as a primary factor.
5. A method as claimed in claim 4, wherein said incentive benchmark is determined as a combination of quality and low cost.
6. A method as claimed in claim 5, wherein said cut-price benchmark comprises a minimum price with a minimum acceptable quality.
7. A method as claimed in claim 1, and embodied as a software in machine readable form on a storage medium.

8. A method of planning a telecommunications packet network, the method comprising; specifying a bearer profile for the network; defining a protocol stack supporting said bearer profile; and determining a target voice quality for the network; wherein said target voice quality determination is effected as a trade-off between a set of voice quality benchmarks.
9. A method as claimed in claim 8, wherein said voice quality benchmarks comprise clarity, incentive and cut-price.
10. A method as claimed in claim 9, wherein said clarity benchmark is determined as voice quality as a primary factor.
11. A method as claimed in claim 10, wherein said incentive benchmark is determined as a combination of quality and low cost.
12. A method as claimed in claim 11, wherein said cut-price benchmark comprises a minimum price with a minimum acceptable quality.
13. A method as claimed in claim 12, wherein a transmission rating factor is calculated for the network.
14. A method as claimed in claim 13, wherein said transmission rating factor ( $R$ ) is determined as
$$R = R_0 - I_s - I_d - I_e + A$$
where  $R_0$  is a signal to noise ratio,  $I_s$  is the sum of real time voice transmission impairments,  $I_d$  is the sum of delayed impairments relative to the voice signal,  $I_e$  is an equipment impairment factor, and  $A$  is an advantage factor.
15. A method as claimed in claim 14, wherein a budget allocation is determined from a combination of the transmission factor rating, the equipment impairment factor and a delay margin.

16. A network plan prepared by a method as claimed in claim 8.
17. A network plan as claimed in claim 16, and embodied in a digital signal.
18. A method of planning a network which is capable of passing packet based data therethrough, the method comprising; determining a set of requirements for the network; determining the factors which affect the passage of said packet based data through the network; modelling the performance of the network based on said requirements and said factors; a comparer for comparing the performance with an objective comparison model; responsive to said comparing iteratively adjusting said factors to improve the network model performance and to maintain the network requirements; and outputting a plan of the network.
19. A method as claimed in claim 18, wherein said network plan is output in the form of software.
20. A network planning tool for planning a network which is capable of passing packet based data therethrough, the tool comprising: an input for inputting requirements of the network; an input for determining factors which effect the passage of said packet based data through the network; a modelling module for modelling the performance of the network based on said requirements and said factors; a comparer for comparing the performance with an objective comparison model; a feedback mechanism for iteratively adjusting said factors to improve the performance and maintain the network requirements; and an output for outputting a plan of the network.
21. A network planning tool as claimed in claim 20, wherein said network requirements are selected from the group comprising quality, incentive, cut-price and combinations thereof.

22. A network planning tool as claimed in claim 21, wherein said voice quality benchmarks comprise clarity, incentive and cut-price.
23. A network planning tool as claimed in claim 22, wherein said clarity benchmark is determined as voice quality as a primary factor.
24. A network planning tool as claimed in claim 23, wherein said incentive benchmark is determined as a combination of quality and low cost.
25. A network planning tool as claimed in claim 24, wherein said cut-price benchmark comprises a minimum price with a minimum acceptable quality.
26. A network planning tool as claimed in claim 20, and embodied as software in machine readable form on a storage medium.